

Application No.: 09/755,437

REMARKS

The following claims are pending in the application: 1 – 18 and 44 – 46

The following claims have been amended: 8, 13, and 44

The following claims have been deleted: 1 – 7, 10, 11, and 45

The following claims have been added: 47 – 54

As a result of the foregoing Amendment, the following claims remain pending in the application: 8, 9, 12 – 18, 44, and 46 – 54.

The Rejection Under 35 U.S.C. §112, first paragraph

The Examiner rejects claims 1 – 18 and 44 – 46 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner takes the position that there is no disclosure support for the limitation that the contact surface is substantially devoid of dimers oriented in a substantially identical direction in the disclosure as originally filed.

Applicants have cancelled claims 1 – 7, 10, 11, and 45. Applicants have amended claims 8 and 44 (the independent claims) to remove the offensive limitation. Accordingly, Applicants respectfully submit that the Examiner's outstanding 35 U.S.C. §112, first paragraph, rejection may be properly withdrawn.

The Rejection Under 35 U.S.C. §102(b)

The Examiner rejects claims 8 – 11, 13 and 18 under 35 U.S.C. §102(b) as being anticipated by Weaver et al. (US Pat. No. 5,208,154). In so rejecting, the Examiner takes the position that Weaver: (a) teaches an electrode having a surface treated with an

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electrochemically active material that is then connected to an electrical source to allow charged particles to adsorb onto the treated surface (col. 2, ll. 24 – 35); (b) teaches that the electrochemically active material extends out from the electrode in a substantially parallel manner (Figs. 1 and 2); teaches that a preferred material for the electrode is conductive carbon (col. 3, ll. 57 – 59); and teaches that quinone, i.e., $O=C_6H_4=O$, is a suitable electrochemically active material (claim 1). The Examiner further takes the position that since all the bonds in quinone are conjugated, the bond through which it is attached to the surface must be conjugated. With regard to claim 11, the Examiner takes the position that the term “pyrolyzed” is a process-related limitation indicating the manner in which the conductive carbon is formed and that the determination of patentability for a product claim containing process limitations is based on the product itself rather than on the method of production – thus, the conductive carbon electrode of Weaver et al. reads on the substrate of claim 11.

Claims 10 and 11 have been cancelled. Applicants respectfully submit that the Examiner's outstanding rejection may be properly withdrawn as Weaver et al. fails to teach each and every element of the present invention as currently claimed. The Examiner takes the position that since all the bonds in quinone are conjugated, that the bond through which the quinone in Weaver is attached to the substrate must be conjugated. However, the Examiner seems to overlook the express teaching of Weaver that the quinone is not directly bonded to the substrate, but rather is attached to the substrate through an intermediary Si-linkage which destroys delocalization of the electrons. The quinone is not attached to the substrate through a conjugated bond, but rather through a linkage which because of its chemical composition (Si-based) cannot

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constitute a conjugated bond. Thus, there is no delocalization of electrons about the interface of the linkage and the substrate. Therefore, it is improper to consider the disclosure in Weaver of a quinone linked through a Si-linkage to a substrate as anticipatory of a quinone bonded to a substrate through a conjugated bond. Accordingly, the Examiner's outstanding rejection over claims 8, 9, 13 and 18 may be properly withdrawn. Applicants note that former claim 11 has been incorporated into the substance of claim 8 and rewritten as new claim 47. Applicants respectfully submit that the above arguments differentiating claim 8 (as amended) from Weaver et al. are applicable to claim 47.

The Rejection Under 35 U.S.C. §103(a)

The Examiner rejects claims 1, 2, 4 – 7, 12, 15 – 17, and 44 – 46 under 35 U.S.C. §103(a) as being unpatentable over Weaver in view of Wegner et al. (US Pat. No. 4,828,917). In so rejecting, Examiner takes the position that Weaver et al. teaches all of the limitations of claims 1, 2, 4 – 7, 12, 15 – 17, and 44 – 46, as outlined above, except for requiring the substrate to have a roughness less than or equal to the average length of the electrochemically active material and less than 5 μ . The Examiner further takes the position that Wegner et al. discloses that when forming a monolayer on a substrate it is known to make the substrate smooth to allow for the formation of a well defined layer (col. 4, ll. 35 – 38). Thus, concludes the Examiner, one of ordinary skill in the art would be motivated to make the electrode surface of Weaver et al. as smooth as possible to ensure that the layer of electrochemically active material applied to the surface is well defined.

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Applicant has cancelled claims 1, 2, 4 – 7, and 45. Applicants have amended claim 44 thereby incorporating the limitation of claim 45 therein. Applicants have discussed the deficiencies of Weaver et al. at length above and respectfully submit that Wegner et al. (cited for allegedly disclosing that when forming a monolayer on a substrate it is known to make the substrate smooth to allow for formation of a well defined layer) fails to cure Weaver's shortcomings – a conjugated bond between the molecular units and the substrate. Accordingly, Applicants respectfully submit that the combination of Weaver et al. and Wegner et al. fails to render the present invention as described in claims 12, 15 – 17, 44 and 46 an obvious variation of the prior art.

Provisional Double Patenting Rejection

The Examiner provisionally rejects claims 1 – 18 and 44 – 46 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 7 – 11, 16, 22 – 30, and 56 – 58 of US Pat. No. 6,855,950 (was co-pending Application No. 10/376,865). In so rejecting, the Examiner takes the position that although the conflicting claims are not identical, they are not patentably distinct from each other because the inventions of instant claims 1- 18 and 44 – 46 represent a genus of which the inventions described by claims 1, 7 – 11, 16, 22 – 30, and 56 – 58 of US Pat. No. 6,855,950 are species. Thus, the instant monolayer material is generic to monolayer construction of U.S. Pat. No. 6,855,950. Therefore, claims 1, 7 – 11, 16, 22 – 30, and 56 – 58 of US Pat. No. 6,855,950 represents a species of instant claims 1 – 18 and 44 – 46.

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Applicant acknowledges the Examiner's provisional double patenting rejection. Should the rejection mature from provisional status, Applicant will address the rejection at such time.

New Claims 47 – 54

Applicants have added claims 47 – 54 and respectfully submit that no new matter was added in so doing. Newly added independent claim 47 is based upon claim 8 and claim 10. Accordingly, the Examiner should have no difficulty identifying the origin of the limitations of claim 47. Claims 48 – 54 (dependent on claim 47) track the language of claims 13 – 18 (dependent from claim 8).

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CONCLUSION

In view of the foregoing amendment and accompanying remarks, the Applicants respectfully submit that the present application is properly in condition for allowance and may be passed to issuance upon payment of the appropriate fees.

Telephone inquiry to the undersigned in order to clarify or otherwise expedite prosecution of the subject application is respectfully encouraged.

Respectfully submitted,

RICHARD L. McCREERY

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By:

Michael Stonebrook
Michael Stonebrook
Registration No.: 53,851
Standley Law Group LLP
495 Metro Place South, Suite 210
Dublin, Ohio 43017-5319
Telephone: (614) 792-5555
Facsimile: (614) 792-5536